

# Reliance NeoSMG Completes Space Qualification Review

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Reliance Precision Limited ('Reliance') is delighted to receive notification it's NeoSMG (Stepper Motor Gearbox) successfully completed its Qualification Review against the ECSS (European Cooperation for Space Standardisation) Standards on 9th February 2022.

The ECSS, a collaboration between the European Space Agency (ESA), the European space industry represented by Eurospace, and several space agencies, was established to develop and maintain a coherent, single set of user-friendly standards for use in all European space activities. The ECSS Qualification Review exists to test and approve a product for release for use in Space. It is a detailed and stringent process to confirm the product design and validation testing are all fit for purpose.

The NeoSMG is the first Reliance designed assembly ever made for Space, and so was the business's first Qualification Review. The process began in September 2017 and has involved a number of organisations working collaboratively through every step of the process. Alongside the Reliance project team have been Airbus Defence & Space Stevenage (responsible for the NeoSADM (Solar Array Deployment Mechanism)), their customer Airbus Defence & Space Toulouse (responsible for the NeoSAT (Satellite)), the Satellite operator and the European Space Agency.

The Qualification Review comprised fourteen major sections of a detailed testing programme, intended to ensure every design and performance criteria was accurately tested and validated. These rigorous test procedures included extensive performance testing, vibration and shock testing, as well as a stringent life test: to prove the NeoSMG could last its planned life span it had to withstand testing 3x its planned life without failure. Once all the major sections had been successfully completed, a retest of the assembly's performance was undertaken to provide a final validation of the results.



At this stage, Reliance stripped the assembly apart and inspected each of the individual components, in detail, to understand the impact, if any, of the Qualification Review testing. Hannah England, one of Reliance's Senior Production Engineers, who undertook this process explains "Very carefully and systematically we disassembled the unit, recording all the findings by photographing and reviewing all 60+ components. We then remeasured the gears to ensure they still met the manufacturing drawings, putting items under magnification where even the smallest damages would have been seen. We were extremely happy with the outcome of the condition of the internals of the unit, enabling the NeoSMG to become qualified for Space use."

Upon receiving notification of the successful completion of the Qualification Review, Kevin Gould, part of the ESA team, concluded "I would like to offer my sincere gratitude to Reliance for the hard work, dedication, and the considerable degree of professionalism and staying power they have shown to see the NeoSMG through its development to achieve the successful conclusion to its formal Space qualification."

This successful Space qualification means the Reliance NeoSMG can now enter full production. Andy Butt, Reliance's Business Manager – Aerospace Defence and Space, comments "The future of the NeoSMG looks very promising. Work is already underway to ramp up production capacity and enhance service performance, including the building of a much larger space-grade clean room. This means we are able to expect substantial impending orders from Airbus Defence & Space and are excited about future opportunities for this product".